

GR 99 P 8088 - Application No. 10/042,057
Response to Office action 5/20/2005
Response submitted August 21, 2006

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REMARKS/ARGUMENTS

Reconsideration of the application is requested. **BEST AVAILABLE COPY**

Claims 1-20 are now in the application. Claims 1 and 3 have been amended. Claims 9-16 are withdrawn from further consideration. Claims 17-20 have been added.

Support for the added claims is found as follows:

- Claims 17 and 18: The combination of an HTMFC (high temperature membrane fuel cell) and a SOFC (solid oxide fuel cell) as well as the combination of a PEMFC (polymer electrolyte membrane fuel cell) and a SOFC is described throughout the specification. The Markush group in the original claim 3 contains the combination of HTMFC and PEMFC, while the group in the specification, page 10, bottom, includes additional combinations, notably the combination with the SOFC. The combination of a PEM and HTM system is described in the paragraph bridging pages 13 and 14. Additional combinations follow in the detailed description of the exemplary embodiments of the invention.
- Claims 19 and 20: The separate "control" of the at least two subsystems lies at the heart of the invention and it is described throughout the specification. By way of example, one system may be used for the starting operation while the other system is used for auxiliary or on-board power, or for high-power drive situations.

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We once more address the art rejections in which claim 1 has been rejected as being anticipated by Einhart et al. (US 6,531,876 B1, "Einhart") and claims 1 - 4 have been rejected as being anticipated by Barton (US 6,724,194 B1) under 35 U.S.C. § 102(e). We respectfully traverse.

Claim 1 defines a fuel cell installation with at least two separate subsystems. The subsystems are separate, they are of a different fuel cell type, and they have separate voltage controls and/or power electronics.

Similarly, claim 19 defines two or more separate subsystems of mutually different types of fuel cells with mutually different functional characteristics, where each subsystem is controlled separately from the respectively other subsystem.

Einhart deals with fuel cells only in passing. The fuel cell stacks – as correctly pointed out by the Examiner – may have different thicknesses (e.g., due to thermal expansion, due to manufacturing tolerances, or due to different cell thickness). The spring contacts disclosed by Einhart allow for the different thickness, but not more. There is no disclosure in the reference that would point to separate subsystems of a different fuel cell type.

The different thicknesses do not read on the limitation "different fuel cell type." The term "type" as used herein (i.e., in the specification and in the original claims) distinguishes between, for example, HTMFC, PEMFC, SOFC, MCFC, PAFC, and the like. That is, the "separate subsystems" are further defined as not only meaning

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stacks of different thickness, but systems that use different fuels, operate at different temperatures, provide broader output variations in electrical terms, and so on.

By way of example, in a combination of a SOFC (solid oxide fuel cell – a high-temperature system) with a PEMFC (polymer electrolyte membrane fuel cell – a low-temperature system), the two subsystems are operated under very different conditions, they consume entirely different fuels, they exhaust different materials, and they must be controlled with different parameters. A SOFC may use natural gas as its fuel and operate efficiently at 1000°C. Hydrogen is exhausted as a byproduct. A PEM fuel cell, on the other hand, operates below 100°C and uses hydrogen as its fuel (and air or oxygen as an oxidant). The hydrogen from the SOFC can thus be used in the PEMFC. In addition, the heat extracted from the SOFC hydrogen before it is fed to the PEMFC can be used for additional purposes.

Einhart does not anticipate the invention defined in claim 1 or 19.

Barton, it is respectfully submitted, is even less pertinent with regard to the claimed invention. In this regard, the Examiner's comment that applicants have not perfected their claim for priority under 35 U.S.C. § 119 is well taken. It is believed that this should not be necessary because Barton should not even be counted as a pertinent prior art reference.

Barton provides for a voltage meter for a fuel cell stack. There are provided different pickup elements for the individual cells of a stack. Barton does not disclose a fuel cell installation with at least two separate subsystems, where the subsystems are

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separate, are of a different fuel cell type, and have separate voltage controls and/or power electronics.

Barton does not anticipate the invention defined in claims 1 or 19.

The various obviousness rejections under 35 U.S.C. § 103 were discussed in the prior response dated Feb. 24, 2005. Those remarks are incorporated by reference herein. The remarks, in combination with the amended claims, clearly show that the dependent claims are patentable over the art of record.

In summary, none of the references, whether taken alone or in any combination, either show or suggest the features of claims 1 or 19. In view of the foregoing,

reconsideration and allowance of claims 1-20 are solicited.

Respectfully submitted,



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